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ALEXANDRIA AND THE SEA IN HELLENISTIC AND ROMAN TIMES

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ABSTRACT. This contribution discusses the circumstances that led to the foundation of the great seaport of Alexandria by Alexander the Great and its subsequent development into the most important maritime emporium in the Mediterranean. It assesses the commercial, military and cultural importance of Alexandria in the development of the Ptolemaic kingdom of Egypt that lasted from 322 to 30 BC and the even greater significance that it acquired within the Roman empire as the centre of a maritime trading network that reached as far west as Britain and Ireland and as far east as India and Sri Lanka.

RÉSUMÉ. Cette contribution discute des circonstances qui ont amené à la fondation par Alexandre le Grand du majestueux port d'Alexandrie et comment il devint l'emporium le plus important de la Méditerranée. Elle analyse le rôle commercial, militaire et culturel d'Alexandrie dans l'essor du royaume ptolémaïque égyptien, de 322 à 32 av. J.-C., et mesure l'importance encore plus considérable qu'elle acquit au sein de l'empire romain, en tant que centre névralgique de tout un réseau de commerce maritime s'étendant aussi loin que la Grande-Bretagne et l'Irlande à l'ouest, et l'Inde et le Sri Lanka à l'est.



Throughout its history, Egypt has been a riverine civilization par excellence, with the Nile playing a primary role in all aspects of the Egyptians' lives.¹ Of the 6,700km representing the total course of the Nile from its source in Lake Tanganyika to the delta on the southern coastline of the Mediterranean, 1,500km run through the length of Egypt, with an average width of 750m.² Moreover, in Antiquity it was navigable in both directions along its length at almost all times, as its currents flow from the south to the north while the prevailing winds blow in the opposite

¹ HASSAN F.A., 'The Dynamics of Riverine Civilization: A Geoarchaeological Perspective on the Nile Valley, Egypt', *World Archaeology* 29.1 (1997), 51-74.

² SESTINI G., 'Nile Delta: A review of depositional environments and geological history', in *Deltas: Sites and Traps for Fossil Fuels*, ed. M. WHATELEY and K. PICKERING, Oxford: Blackwell Scientific Publications, Geological Society Special Publications no. 41 (1989), p. 101.

century AD) and Claudius Ptolemaeus (2nd century AD), in addition to several medieval Arab authors, all wrote about ancient Nile branches.⁵ The branches extended westward as far as the Canopic Branch which drained in the vicinity of the ancient, currently submerged, towns of Canopus and Heraclion,⁶ and eastward as far as the Pelusiac Branch which debouched north-west of the Sinai Peninsula.⁷ Despite the variations between the ancient authors in defining the exact number, names, nature and routes of those branches, it is quite evident that most of them were navigable, and played a major role in the development of the transport system in Egypt. Therefore, it was at the Nile mouths that the key seaports in Ancient Egypt lay, functioning as the points of contact between Egypt and the wider world of the Ancient Mediterranean. However, as a result of the annual river flood that discharged tons of sediments into the sea, those harbours were constantly subject to silting, a major problem that affected almost all Egyptian harbours before the foundation of Alexandria.⁸

Nonetheless, Egyptian seafaring is evident as early as the Old Kingdom.⁹ A series of reliefs from the temple of Sahura (2458–2446 BC) of the Fifth Dynasty depicts the departure and subsequent return of an overseas military expedition to the Syria–Palestine coast.¹⁰ More iconographic and textual evidence on Egyptian seafaring both in the Mediterranean and Red Sea is available from the Middle and the New Kingdoms. Perhaps one of the most interesting representations of Egyptian maritime activities is the depiction of the sea battle between the Egyptian fleet of Ramses III (1186–1155 BC) and invading Mediterranean tribes of the Sea People, which is considered the only representation of an identifiable sea battle that has survived from ancient times.¹¹ The conflict took place somewhere on the northern shore of the Nile delta, probably in the vicinity of one of the eastern Nile mouths where the Sea People would have entered Egypt from the Mediterranean. Nonetheless, information about Egyptian seafaring activities in the Mediterranean during the pre-Hellenistic period remains far scantier than information about their riverine activities.¹²

⁵ HAMDAN G., *Egypt's Identity: A Study of the Genius of the Place*, Vol. 1, Cairo: المكنان عبقرية في دراسة مصر شخصية (In Arabic) (1980), pp. 189–206.

⁶ STANLEY D.-J., *Geoarchaeology: Underwater Archaeology in the Canopic region in Egypt*, Oxford: Oxford Centre for Maritime Archaeology (2007).

⁷ SNEH A. and WEISSBROD T., 'Nile Delta: The Defunct Pelusiac Branch Identified', *Science*, 180.4081 (1973), 59–61.

⁸ SAID, *The Geological Evolution of the River Nile*, *op. cit.*, pp. 74–5.

⁹ FABRE D., *Seafaring in Ancient Egypt*, London: Periplus Publishing (2004), pp. 1–4.

¹⁰ JONES D., *Boats (Egyptian Bookshelf)*, Austin: University of Texas Press (1995), p. 40.

¹¹ CASSON L., *Ships and Seafaring in Ancient Times*, Austin: University of Texas Press (1994), pp. 22–25.

¹² VINSON, *Egyptian Boats and Ships*, *op. cit.*, pp. 23–45.

HELLENISTIC ALEXANDRIA AND THE SEA

A major turning point in the history of Egyptian and Mediterranean seafaring was the foundation of Alexandria in the 4th century BC. Strabo states that ‘when Alexander visited the place and saw the advantages of the site, he resolved to fortify the city on the harbour’.¹³ This statement about the foundation of Alexandria raises a question about the advantages that Alexander the Great recognized in the location of what would be the capital of Egypt for more than a millennium to follow. What Alexander needed was a deepwater seaport on the northern coast of Egypt, which would not be affected by the silting problem caused by the Nile sediments, yet would provide access to the Nile and hence to the rest of the country. He also wanted the harbour to be spacious enough, not only to accommodate his fleet, but also to handle any future commercial and military expansions. Alexandria had both advantages. The fact that Alexandria was founded to the west of the western-most branch of the Nile, the Canopic branch, ensured that it would not be affected by the sediments deposited at the Nile mouths. The longshore drift and sea current running parallel to the shoreline in a west-east direction shifted away from Alexandria much of the silt deposited during the flood season, a phenomenon that contributed significantly to the survival of Alexandria’s harbour.¹⁴ The fact that Alexandria was not directly situated at, or east of, a Nile mouth obviated the problems that could have resulted from the build-up of Nile sediment deposited in the harbour basins.

However, Alexandria was linked to the Nile via navigable canals that connected the city and its harbours to the Canopic Branch.¹⁵ Moreover, to the south of the city extended Lake Mareotis, a large body of water that was fed by the Nile through several canals that approached the lake from the south and east.¹⁶ This network of internal waterways enabled the movement of people and goods between Alexandria and the interior of Egypt. In other words, the indirect link between Alexandria and the River Nile, through a series of canals and Lake Mareotis, influenced the social, economic and political nature of the city throughout its history. It is worth mentioning, however, that the creation of the harbour at Alexandria was a direct result of one of Alexander’s first projects on the site; the construction of the Heptastadion (fig. 2). The 1.2km causeway joined the offshore island of Pharos to the mainland opposite; as a result, the Eastern and the Western Harbours of Alexandria were created.¹⁷

¹³ Strabo, *Geography*, 17.1.6, trans. H.L. JONES, The Loeb Classical Library, Cambridge MA: Harvard University Press (2001), vol. VIII, p. 29.

¹⁴ WARNE A.G. and STANLEY D.J., ‘Late Quaternary Evolution of the Northwest Nile Delta and Adjacent Coast in the Alexandria Region, Egypt’, *Journal of Coastal Research*, 9.1. (1993), 26–64.

¹⁵ BERGMANN M. and HEINZELMANN M., ‘Schedia – Alexandria’s Harbour on the Canopic Nile. Interim Report on the German Mission at Kom El Giza/Beheira (2003–2008)’, in *Lake Mareotis: Reconstructing the Past*, ed. L. BLUE, BAR International Series 2113, Oxford: Archaeopress (2010), pp. 107–118.

¹⁶ Strabo, *Geography*, 17.1.22, *op. cit.*, p. 73.

¹⁷ *Ibid.*, 17.1.6, p. 27.

ALEXANDRIA AND THE SEA

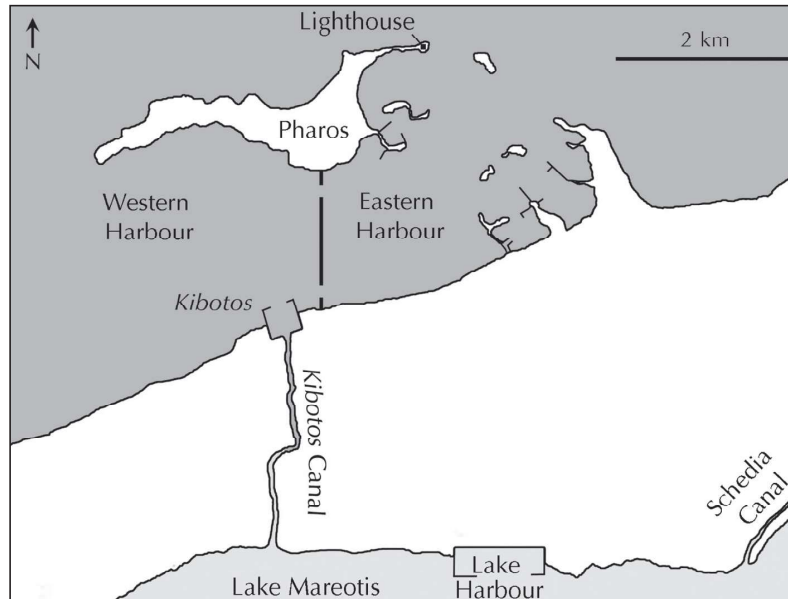


Fig. 2 Map showing the layout of the harbours of Alexandria.

Following the death of Alexander in 323 BC, his empire was split up between his top generals and three major kingdoms emerged, centred on Egypt, Macedonia, and Syria/Mesopotamia. For the three centuries that followed, known as the Hellenistic era, Egypt was ruled by the Ptolemies who had Alexandria as their capital, naval base and major showcase for their wealth and splendour.¹⁸

Perhaps one of the earliest projects that the Ptolemies carried out in Alexandria was the construction of the Pharos Lighthouse which stood at the entrance to the city's Eastern (Great) harbour. The construction of the Pharos Lighthouse was completed during the reign of Ptolemy II around 279 BC and it remained functioning until the 7th century AD, when it became subject to a number of disasters which were concluded in the 14th century by an earthquake that destroyed what was left of it. It is believed that the total height of Pharos Lighthouse was about 130m; only 10m less than the great Giza pyramid.¹⁹ However, the construction of the Pharos Lighthouse had a direct effect on the establishment of Alexandria as the crossroads of the Mediterranean for almost one thousand years. As mentioned earlier, before the foundation of Alexandria, the Canopic mouth of the Nile was the main entrance to Egypt. The fifth-century BC Greek historian Herodotus states that 'If you take a cast of lead a day's sail off-shore, you will get eleven fathoms, muddy bottom'.²⁰ That was one way of identifying the entrance to the Canopic

¹⁸ LLOYD A., 'The Ptolemaic Period', in *The Oxford History of Ancient Egypt*, ed. I. SHAW, Oxford: Oxford University Press (2002), pp. 399–402.

¹⁹ EMPEREUR J.-Y., *Le Phare d'Alexandrie, La Merveille retrouvée*, Paris: Gallimard (1998), pp.12–46.

²⁰ Herodotus, *The Histories*, 2.4., trans A. DE SÉLINCOURT, Harmondsworth: Penguin Books (1971), p. 131.

mouth. However, Alexandria lies on a featureless flat coast, away from the Nile sediments, which made the city unrecognisable to incoming boats. Therefore, a landmark had to be developed designating the newly founded city. Also, since ancient mariners were quite familiar with the Canopic branch of the Nile, the Ptolemies had to create an attraction for merchants and ship owners to come into the new harbour. The Pharos Lighthouse was an artificial landmark that could be seen from several kilometers out at sea. Sailors heading towards Egypt would recognise the landmark and be able to direct their course to the entrance of Alexandria's harbour.

During the Hellenistic era Alexandria became the largest emporium in the Mediterranean. Hence, it was involved in three types of trade that converged at its harbours. The first line of trade was related to the imports that arrived at Alexandria. For millennia the Egyptians grew and made all that they needed to survive so, in terms of life's necessities, Egypt was quite self-sufficient. Imports were never needed for ordinary people's daily life. In Alexandria, imported goods were mainly luxury items for the use and benefit of the wealthy Greek community. Into Alexandria, ships from various ports of the Mediterranean arrived, carrying olive oil, honey, wines, cheese, marble and fine pottery, in addition to materials and supplies needed for the Ptolemaic naval forces such as timber, copper, tin and iron. On the other hand, there were the exports, mainly grain, papyrus and textiles, which were carried from Alexandria to harbours across the Mediterranean. The bulk export was grain, which was a basic product in international trade. By the fourth century BC Egypt was exporting grain to Athens, the Aegean Islands and many coastal cities of Asia Minor.²¹ However, grain trade and transport would take different dimension during the Roman era.

Alexandria was also part of another long-distance trade route that extended as far as East Africa and India. From the east coast of Africa, the Arabian Peninsula and India came exotic and luxury items such as myrrh, ivory, tortoise shells, pearls, gems, silk and spices, which were brought by merchant ships to the Egyptian Red Sea ports, then transferred overland across the Eastern Desert to the Nile, and from there they were transported by river boats to Alexandria and from there to other Mediterranean harbours.²²

In addition to its commercial and economic role, the harbour of Hellenistic Alexandria accommodated one of the largest naval fleets in the ancient Mediterranean. During the Hellenistic period, the continuous tension between the Hellenistic kingdoms, particularly between the Ptolemies and the Seleucids, caused a maritime arms race, which resulted in the creation of some of largest fleets that the Mediterranean ever witnessed. From Athenaeus (2nd–3rd century AD) we know that the fleet of Ptolemy II (282–246 BC) consisted of more than 300 warships of different types and sizes, including some of the most gigantic

²¹ CASSON L., *The Ancient Mariners*, 2nd edition, Princeton: Princeton University Press (1991), pp. 157–169.

²² *Ibid.*, p. 161.

ALEXANDRIA AND THE SEA

warships known in ancient times.²³ Most of the Ptolemaic fleet was stationed in the harbours of Alexandria, which had enough facilities to handle and manage both the merchant and the naval activities.

In addition to its commercial and military role, Hellenistic Alexandria also stood out as a cultural crossroads and an intellectual hub. Among the projects that were carried out by the early Ptolemies were the creation of the Mouseion and Library of Alexandria, which soon became major points of reference on the scholarly level and a source of cultural influence for the entire Mediterranean.²⁴ Alexandria quickly became a focal point and a major attraction for those seeking education and knowledge, and many foreigners visited Alexandria for business and education. In the streets of Alexandria Greeks, Egyptians, Jews, Arabs, Phoenicians, Lycians, Romans, Carthaginians, Syracusans and many more could be seen. Accordingly, the coexistence of the predominant Greek culture in the city, along with other cultures, particularly the Ancient Egyptian, influenced the cosmopolitan nature for Hellenistic Alexandria since the very early stages of its history.

For three centuries Alexandria remained the most important port-city in the Mediterranean. However, the internal struggles, greed and disregard of the later Ptolemies were significantly weakening their control over Egypt. Consequently, many of the kingdom's facilities and resources were declining because of negligence. On the other hand, the later Ptolemies were constantly seeking to gain the favour and support of the Romans, who showed an increasing interest in Egyptian affairs. Eventually, the defeat of Cleopatra and Marcus Antonius in Actium, followed by their suicide, put an end to Ptolemaic rule. Egypt was officially annexed to the Roman Empire in 30 BC.²⁵ Nonetheless, Alexandria continued to play an important role in the history of the Mediterranean, utilised as a part of a bigger and more complex commercial and naval system serving the Roman Empire. The glory of Hellenistic Alexandria was never paralleled again in the history of the city and it remains, in many aspects, a unique case in ancient history.

ROMAN ALEXANDRIA AND THE SEA

With the annexation of Egypt, the whole Mediterranean basin was unified under Roman rule, and the Mediterranean Sea became a Roman lake, so called Mare

²³ MORRISON J.S., *Greek and Roman Oared Warships*, Oxbow Monograph 62, Oxford: Oxbow Books (1996), pp. 37–38. MURRAY W.M., *The Age of Titans: The Rise and Fall of the Great Hellenistic Navies*, Oxford: Oxford University Press (2012), pp. 171–207.

²⁴ EL-ABBADI M., *Life and Fate of the Ancient Library of Alexandria*, Paris: UNESCO Publication (1992). BINGEN J., MIDGLEY S. and BAGNALL R., *Hellenistic Egypt: Monarchy, Society, Economy, Culture (Hellenistic Culture and Society)*, Edinburgh: Edinburgh University Press (2007), pp. 25–28, 240–255.

²⁵ ALSTON R., *Soldier and Society in Roman Egypt*, London: Routledge (1995), p. 10; GOODMAN, M., *The Roman World 44 BC - AD 180*, London: Routledge (1997), p. 264; HÖLBL, G., *A History of the Ptolemaic Empire*, London: Routledge (2001), pp. 246–251.

Nostrum, 'our sea', by the Romans.²⁶ Consequently, it became a strategic necessity for the Roman Empire to ensure the safety of the sea routes and maintain tight control over the Mediterranean region, not only to provide safe passage for both goods and people travelling through the Empire, but also to guarantee a regular supply of staples to the people of Rome. Therefore, Rome's first emperor, Augustus, and his successors devoted most of the Empire's naval fleets to peacekeeping duties along the Mediterranean coasts, on the sea routes, in the harbours and the major navigable rivers.²⁷ A strategic aim during the early empire was anti-piracy control, which resulted in the Mediterranean being effectively cleared of pirates during the first two centuries AD.²⁸

Up until the 3rd century AD, the Roman Empire managed to maintain peace and prosperity in the Mediterranean, which had a direct effect on trade and transport within the Empire and beyond. This prolonged period of Pax Romana, together with the political integration of the Mediterranean basin under Roman control, led to significant economic growth. It reduced the risk, and thus the cost, of long-distance water transport, resulting in a substantial increase in the extent and volume of seaborne trade. It also contributed to the development of new trading opportunities and markets, as well as access to sources of raw materials in remote regions.²⁹ However, under the Roman Empire, Alexandria lost much of its political and cultural influence and advantages. Nonetheless, throughout the Roman period, it remained the first city of the province of Egypt and the second most important city in the Empire after Rome. In the time of Augustus it had a population of about half a million which is almost half the population of the Empire's capital at that time³⁰. Moreover, the great economic value that the city represented to the Empire, together with the social and cultural values it inherited from its Hellenistic era, implied that Alexandria would retain a distinct position among the cities of the province. Therefore, Alexandria was conceived by Roman administration as a special part of Egypt. Its official nomenclature was *Alexandria ad Aegyptum* 'Alexandria by Egypt' rather than 'in' or 'of' Egypt, and the

²⁶ RICKMAN G., 'Mare Nostrum', in *The Sea and History*, ed. E.E. RICE, Stroud: Sutton & Sutton (1996), pp. 1–14.

²⁷ ROUGÉ J., *Ships and Fleets of the Ancient Mediterranean*, Middleton CN: Wesleyan University Press (1981), p.119; REDDÉ M., *Mare Nostrum: les infrastructures, le dispositif et l'histoire de la marine militaire sous l'empire romaine*, Rome: École française de Rome (1986).

²⁸ CASSON L., *Travel in the Ancient World*, Baltimore: The Johns Hopkins University Press (1994), p.149; DE SOUZA P., *Piracy in the Graeco-Roman World*, Cambridge: Cambridge University Press (1999), pp. 204–210.

²⁹ CASSON, *The Ancient Mariners, op.cit.*, pp. 198–199; HOPKINS K., 'Rome, Taxes, Rents and Trade', in *The Ancient Economy*, ed. W. SCHEIDEL and S. VON REDEN, Edinburgh: Edinburgh University Press (2002), p. 219; PARKER A.J., 'Sea Transport and Trade in the Ancient Mediterranean', in *The Sea and History, op. cit.*, p. 108.

³⁰ LEWIS N., *Life in Egypt under Roman Rule*, Oxford: Clarendon Press (1983), p. 26; DELIA D., 'The Population of Roman Alexandria', *Transactions of the American Philological Association*, 118 (1988), 275–292; BOWMAN A., *Egypt after the Pharaohs 332 BC - AD 642*, London: British Museum Press (1996), p. 208.

full title of the governor of Egypt was *Praefectus Alexandriae et Aegypti* 'Perfect of Alexandria and of Egypt'.³¹

The most important aspect of Roman Alexandria was the unprecedented role that it played in the economy of the Empire, particularly as an entrepôt for international trade. The city's favourable location and natural advantages enabled it to provide easy access to the interior of the province. Additionally, the size and facilities of its well-established Hellenistic harbours were able to satisfy the increasing needs of the Roman administration without requiring substantial alterations or modifications.

It was at the harbours of Rome that maritime routes converged; ships were arriving from different places carrying various products to satisfy the needs of Roman consumers. Yet, there were two particular lines of trade that surpassed all others, namely Rome's trade in the Indian Ocean and the Alexandria-Rome grain trade. The first line of trade involved travelling for exceptionally long distances to obtain exotic and costly products from Arabia, India and East Africa intended mainly for the use of the Roman élite. The second line of trade involved the shipment of Egyptian grain essential for feeding the privileged population of the Empire's capital.³² Both lines passed through Alexandria and they required the utilisation of various resources in Egypt.

It is evident that the economy of ancient Alexandria was not based on its agricultural or industrial activities; instead its economy was primarily based on the city's maritime nature. Moreover, maritime activities in Alexandria were directly related to agriculture and industry that took place in the countryside and along the Nile valley. Probably the most significant Egyptian product that was meant for transshipment through Roman Alexandria was Egyptian grain. During the early Roman Period (30 BC to AD 250), between 135,000–150,000 tons of grain-tax travelled annually along the Nile to Alexandria to be shipped to Rome.³³ However, it is believed that this amount may have represented no more than half the grain that was shipped downriver to Alexandria.³⁴ Large quantities of grain would have been destined for the city's local consumption, or made available for commercial export. In addition to the Egyptian products and grain tax that were shipped to Alexandria, quarried stones from the Eastern Desert were carried on Nile boats down the river to Alexandria and from there were transported to seagoing vessels which carried them to other Mediterranean ports.³⁵ On the other hand, Alexandria was also receiving the valuable products of Arabia, East

³¹ BOWMAN A. and RATHBONE D., 'Cities and Administration in Roman Egypt', *The Journal of Roman Studies*, 82 (1992), 115; BOWMAN, *Egypt after the Pharos 332 BC - AD 642*, *op. cit.*, p. 205; RIAD H., 'Egyptian Influence on Daily Life in Ancient Alexandria', in *Alexandria and Alexandrianism*, ed. K. HAMMA, Los Angeles: The J. Paul Getty Museum (1996), p. 29.

³² CASSON, *The Ancient Mariners*, *op. cit.*, pp. 200–212.

³³ RICKMAN G., *The Corn Supply of Ancient Rome*, Oxford: Clarendon Press (1980), pp. 231–235; LEWIS N., *Life in Egypt under Roman Rule*, Oxford: Clarendon Press (1983), p.165; CASSON L., *Ancient Trade and Society*, Detroit: Wayne State University Press (1984), pp. 70–86.

³⁴ BAGNALL R., *Egypt in Late Antiquity*, Princeton: Princeton University Press (1993), p.107.

³⁵ PEACOCK D., 'The Roman Period', in *The Oxford History of Ancient Egypt*, *op. cit.*, pp. 426–7.

African and India, such as incense, ivory, gems, spices, tortoiseshell and silk.³⁶ Ships sailing from Egypt to Africa and India departed from and returned to the harbours of Myos Hormos and Berenike on the Egyptian Red Sea coast. When the ships arrived, carrying commodities from the East, they were offloaded, and goods were transported across the Eastern Desert by beast of burden to the Nile where they were loaded onto Nile boats, which carried them down-river to the great emporium of Alexandria. Of the various eastern imports, a small amount remained in Egypt while the greater part was transhipped from Alexandria to Rome and other Mediterranean harbours.³⁷ Alexandria was not only receiving products meant for transshipment to the Mediterranean, but also merchant vessels were arriving at Alexandria from the Mediterranean laden with products such as wine, oil and metals intended for local consumption and for trade with the East.³⁸ Accordingly, it is evident that Alexandria functioned as an entrepôt for an extended maritime trade network which involved both internal and external transport of different products and commodities.

The two main factors that determined the arrival and departure schedule of ships and merchandise to and from Alexandria were the sailing season and sea routes in the Mediterranean, which were mainly determined by the wind patterns. Generally speaking, the main sailing season in the Mediterranean was the summer, which had moderate winds and clear skies that enabled seamen to use natural navigation efficiently.³⁹ May to September was considered the most suitable sailing season, nonetheless, it was not unusual for merchant vessels to sail as early as March or as late as November. However, mid November was the date after which merchant vessels were no longer protected against loss at sea by the terms of loan contracts.⁴⁰ On the other hand, winter in the Mediterranean was the period that the Romans called *mare clausum*, 'the sea is closed'.⁴¹ It is characterized not only by violent winds, but also by an increasing amount of cloudiness and low visibility, which makes navigation very difficult.⁴² Therefore, open-sea sailing was generally discouraged from October to April or even from

³⁶ YOUNG G., *Rome's Eastern Trade: International Commerce and Imperial Policy 31 BC - AD 305*, London: Routledge (2001), pp. 38-79; PEACOCK, 'The Roman Period', *op. cit.*, pp. 432-3.

³⁷ CASSON L., 'Rome's Trade with the East: The Sea Voyage to African and India', *Transactions of the American Philological Association*, 110 (1980), pp. 21-36; CASSON L., *The Periplus Maris Erythraei*, Princeton: Princeton University Press (1989), p.13; CASSON, *The Ancient Mariners*, *op. cit.*, p. 162.

³⁸ *Ibid.*, p.206; PEACOCK D., 'Previous work', in *Myos Hormos- Quseir Al- Qadim: A Roman and Islamic Port Site on the Red Sea Coast of Egypt: Surveys and Excavation 1999-2003*, ed. D. PEACOCK, L. BLUE et al., Oxford: Oxbow Books (2006), pp. 3-6.

³⁹ CASSON L., *Ships and Seamanship in the Ancient World*, Baltimore: Johns Hopkins University Press (1971), pp.270-2; MCGRAIL S., *Ancient Boats in North-West Europe*, London: Longman Archaeological Series (1998), pp. 276-28.

⁴⁰ ROUGÉ, *Ships and Fleets of the Ancient Mediterranean*, *op.cit.*, pp. 16-7.

⁴¹ ROUGÉ J., 'La navigation hivernale sous l'Empire romaine', *Revue des Études Anciennes* 54 (1952), 316-25. For the most recent research, modifying this rather extreme view of the limits of the ancient sailing season, see BERESFORD, J., *The Ancient Sailing Season*, Leiden: Brill (2013).

⁴² MCGRAIL, *Ancient Boats in North-West Europe*, *op. cit.*

September to May. During this period large-scale merchant shipping was avoided unless it was deemed to be particularly urgent.⁴³

Sailing from Alexandria to Rome was mostly done against prevailing northwesterly winds. During the voyage, merchant vessels had to travel for about 1,450 nautical miles by either of two circuitous routes. The first one started by heading eastwards along the northern coast of Egypt, then northwards along the Levantine coast to Cyprus. From there, vessels turned west along the southern coast of Asia Minor until Rhodes, then to the southern coast of Crete. From Crete vessels were able to sail across to Malta, Sicily and up the strait of Messina to the harbours of Puteoli in Campania, or Ostia and Portus, much closer to the city of Rome. The other route went from Alexandria westwards along the North African coast as far as Cyrene, and then across the Mediterranean Sea to Italy. By either route, the voyage took between one and two months with an average speed of 2–2.5 knots.⁴⁴ On the other hand, the return voyage was much easier since vessels were sailing with favourable winds. The direct distance from Ostia to Alexandria, about 864 nautical miles, was covered in a period of ten days to three weeks, as a vessel could make about 4–6 knots under favourable winds.⁴⁵

The best information we have about sailing seasons and routes between Alexandria and Rome concerns the grain fleet that was involved in transshipping Egyptian grain to the capital of the Empire. Ships, which had wintered in Alexandria, would have been loaded up with grain that was stored in the central granaries of the city, and start their outgoing voyage in May, arriving at Ostia or Portus by the end of June. After unloading their cargo and obtaining official clearance to leave, they returned to Alexandria arriving possibly by the end of July. These vessels would have been able to reload at Alexandria and possibly make another voyage to Rome before the end of the sailing season. Conversely, ships that had wintered in Rome's harbours would set sail for Alexandria by April, arriving there by early May; they would then load and sail back to reach Rome by July.⁴⁶ At any rate, there was at least one major convoy a year of the Alexandria grain fleet, and possibly no more than two complete runs between Alexandria and Rome could be made during a sailing season. Accordingly, it would have been a privilege for vessels to winter in Alexandria, since they would have been loaded with grain and ready to travel at the outset of the sailing season. Moreover, they had a better chance of making two runs during the season. Therefore, Alexandria was probably preferred as a wintering harbour for most vessels in the grain fleet. The choice of a wintering port was probably governed by another factor as well;

⁴³ CASSON, *Travel in the Ancient World*, *op. cit.*, pp. 150–152.

⁴⁴ RICKMAN, *The Corn Supply of Ancient Rome*, *op. cit.*, pp. 130–1; ROUGÉ, *Ships and Fleets of the Ancient Mediterranean*, *op. cit.*, p. 190; CASSON, *Ships and Seamanship in the Ancient World*, *op. cit.*, pp. 289–91, 297–9.

⁴⁵ RICKMAN, *The Corn Supply of Ancient Rome*, *op. cit.*, pp. 14–5; HORDEN P. and PURCELL N., *The Corrupting Sea*, Oxford: Blackwell (2002), pp. 138–9.

⁴⁶ RICKMAN, *The Corn Supply of Ancient Rome*, *op. cit.*, pp. 129–31; CASSON, *The Ancient Mariners*, *op. cit.*, p.210; CASSON, *Ships and Seamanship in the Ancient World*, *op. cit.*, pp. 297–299; PEACOCK, 'The Roman Period', *op. cit.*, p.428.

that is the homeport of the commercial shippers who ran the operation. Since Rome never possessed a state-owned merchant fleet for transporting grain, this operation was left by and large, at least until the 4th century AD, to private merchant shippers under the supervision of state officials. Transporting grain from Alexandria to Rome was particularly in the hands of Alexandrian shippers who were not only ship owners but also grain merchants.⁴⁷ They would certainly have preferred their ships to winter in their home port. Moreover, the Alexandria harbours offered spacious facilities to accommodate and maintain vessels during the wintering season. Therefore, the majority of ships would have wintered in Alexandria and departed, fully loaded, from there in the spring.

However, it should be emphasized that the directional shipment of Egyptian grain to Rome was an exceptional maritime enterprise, undertaken for the direct benefit of the Empire's capital. Therefore, neither the volume nor the organization of this specialized operation should be considered the norm for Roman maritime trade.⁴⁸ In other words, maritime enterprises of a much smaller scale utilized coasters and merchant vessels of various burdens to carry an array of mixed products to and from Alexandria, even during winter months. They tramped along the northern and southern coasts of the Mediterranean, between different regions of the Empire, picking up cargo along the way and trading from port to port.

The size and capacity of merchant vessels that used the harbour of Alexandria varied greatly. Most of the information we have about the tonnage of merchant ships is deduced from ancient texts particularly discussing grain carriers. Additionally, archaeological investigation of several Roman shipwrecks in the Mediterranean resulted in estimations of their capacities. Like their Hellenistic predecessors, the Roman shipbuilders were technically capable of building exceptionally large ships; however, the size of Roman merchant ships directly reflects the increasing need for cargo space to satisfy the enormous demand of the Empire's capital.⁴⁹ In the 1st century AD, the Roman administration decided that the smallest acceptable freighter for grain transport should be at least 70 tonnes. However, by the 2nd century AD the standard grain carriers that ran between Alexandria and Rome were of about 340–400 tons burden, which was not considered oversize for Roman merchant vessels in general.⁵⁰ Nevertheless, Alexandria was occasionally accommodating exceptionally large freighters with a capacity up to 1000 tons and more, such as the *Isis*, which was a large grain ship of the 2nd century AD, working between Alexandria and Rome. It is believed to have been about 55m long, 14m in beam and with a carrying capacity of between

⁴⁷ RICKMAN, *The Corn Supply of Ancient Rome*, *op. cit.*, pp. 17, 72–73; CASSON, *Ancient Trade and Society*, *op. cit.*, p. 101.

⁴⁸ HORDEN and PURCELL *The Corrupting Sea*, *op. cit.*, pp. 172, 365–366.

⁴⁹ ROUGÉ, *Ships and Fleets of the Ancient Mediterranean*, *op. cit.*, pp. 75–78; GREENE K., *The Archaeology of the Roman Economy*, Berkeley: University of California Press (1990), pp. 25; CASSON, *Ships and Seamanship in the Ancient World*, *op. cit.*, pp. 184–185.

⁵⁰ CASSON, *ibid.*, pp. 170–173; RICKMAN, *The Corn Supply of Ancient Rome*, *op. cit.*, p. 123; RICKMAN, 'Mare Nostrum', *op. cit.* p.8.

1200 and 1300 tons.⁵¹ However, it seems unlikely that many extraordinary large ships, like the *Isis*, were part of the Roman merchant fleet, which was more likely composed of smaller ships. Relying on such huge vessels for a crucial job like grain transport would represent a greater risk of a massive loss of grain in case of wreckage, which could mean the threat of famine to Rome. In fact, a large number of average size vessels would mean increasing the rate at which ships supplied the city in a much more regular way than employing few vessels of an enormous size.

The exact number of ships in the Roman grain fleet is unknown. However, it has been estimated that the number of vessels necessary to carry the 135,000 tons of Egyptian grain to Rome would have been about 80 ships of the equivalent size of *Isis*, provided that each vessel made only one run during the sailing season.⁵² Considering that average-size carriers were more likely to predominate, their number was probably much greater than 80 ships. Assuming an average ship of 340 tons capacity, the 135,000 tons of grain would have required almost 400 shiploads. But since it was possible for some vessels to make two runs during the sailing season, the number of ships required could have been somewhat less than 400. Obviously, not only grain vessels were involved in trade between Alexandria and the harbours of Rome, but also other ships of various sizes were being accommodated and served in the harbours of Alexandria.

UNIQUE ALEXANDRIA

By addressing Alexandria's maritime capacity, it becomes evident that there were two main factors that influenced the city's unique status as a crossroads for Hellenistic and Roman maritime transport. First, it was the city's connection with a network of internal waterways which enabled the movement of goods between Alexandria and the interior of Egypt. Therefore, the indirect link between Alexandria and the River Nile, through a series of canals and Lake Mareotis, influenced the economic potential of the city throughout its history. Second, it was the features of the city's harbour in terms of its size and facilities which were able to meet the needs of a large number of ships and boats of different types and sizes that ensured its long-lasting importance.

Upon the annexation of Egypt to the Roman Empire Alexandria ceased to be the capital of an independent kingdom, but it became the largest metropolis in the new province with several administrative privileges. Such a political transformation entailed significant economic changes that affected not only Alexandria, but also the entire province. Under the Ptolemies, the country's resources were placed in the hands of the royal capital and its elite inhabitants. Therefore, the commercial infrastructure of Hellenistic Alexandria, such as the harbours, canals and emporium, were intended to support the city and to facilitate

⁵¹ CASSON, *ibid.*, pp. 186–188.

⁵² CASSON, *The Ancient Mariners, op. cit.*, p. 209.

the flow of commodities to and from Alexandria. On the other hand, under Roman rule, the entire province was exploited for the benefit of the empire's capital. However, Alexandria still retained its cultural splendour, and the city's economic and maritime importance was undiminished.⁵³

It is likely that the harbour of Alexandria was basically the same in terms of its physical features during the Roman period as it had been during the Hellenistic period. However, the change in the political, and hence the economic standing of Alexandria, from the Hellenistic to the Roman period, resulted in significant modifications in the way the harbour system was managed under Roman administration.

The Roman contribution towards the Alexandria harbours system took the form of building new canals, establishing new facilities, organising incoming and outgoing traffic and applying a coherent system of control, inspection and tax collection. All these measures were motivated by the desire to ensure an easy and steady flow of staples and other merchandise to the Empire's capital and a regular source of income for Roman administration in Egypt. Therefore, the Romans worked on reorganizing the harbours by re-using Ptolemaic military quays, docks and warehouses for commercial purposes.

The Roman administration never intended for Alexandria to be as sumptuous and impressive a port complex as Portus, for example.⁵⁴ They just wanted to guarantee the continuity and safety of their strategic supplies. Therefore, the limited developments in the harbour focussed on berthing and storage facilities to cope with the expanding commercial activities and hence the large number of vessels that were using the harbour.

Nevertheless, Alexandria remained the mistress of the sea from its foundation for almost a thousand years, until the Arab conquest in AD 642⁵⁵ when the foundation of Al-Fustat as the new capital of Egypt announced the beginning of a new era in the history of the entire country and certainly of Alexandria.

In AD 102 the Greek orator Dio Chrysostom visited and spoke of Alexandria.⁵⁶ His words eloquently illustrate how the city was perceived by seafarers, traders and travellers of his time:

...not only have you a monopoly of the shipping of the entire Mediterranean by reason of the beauty of your harbours, the magnitude of your fleet, and the abundance and marketing of the products of every land, but also the outer waters that lie beyond are in your grasp, both the Red Sea and the Indian Ocean, whose name was rarely heard in former days. The result is that the

⁵³ BOWERSOCK G.W., 'Late Antique Alexandria', in *Alexandria and Alexandrianism*, ed. K. HAMMA, Los Angeles: The J. Paul Getty Museum (1996), pp. 263.

⁵⁴ KEAY S., MILLETT M., PAROLI L. and STRUTT K., *Portus: An Archaeological Survey of the Port of Imperial Rome (Archaeological Monographs of the British School at Rome 15)*, Rome: British School at Rome (2006).

⁵⁵ BUTLER A.J., *The Arab Conquest of Egypt*, New York: Oxford University Press (1978), pp. 194-367.

⁵⁶ Dio Chrysostom, *Discourse: To the People of Alexandria*, trans. J.W. COHOON and H.L. CROSBY, The Loeb Classical Library, London: Heinemann (1940), 32.36.

ALEXANDRIA AND THE SEA

trade, not merely of the islands, ports, a few straits and isthmuses, but of particularly the whole world is yours. For Alexandria is situated, as it were, at the crossroads of the whole world, of even the most remote nations thereof, as if it were a market serving a single city.